# Area C and D Pre-Design Soil Investigation Report

Bristol-Myers Squibb Manufacturing Company Humacao, Puerto Rico

September 2007

#### **Table of Contents**

1.0	Introduction	1
2.0	Summary of Activities Performed	2
3.0	Results of Soil Investigation	3

#### **Tables**

- 1. Soil Sampling Results Area C and D Predesign Investigation
- 2. Soil Bulk Density Results

## **Figures**

- 1. Site Map Area C and D
- 2. Cell Profiles Area C and D

## **Appendices**

Appendix A Soil Boring Logs

Appendix B Laboratory Analytical Results

#### 1.0 Introduction

A soil investigation was conducted at the Bristol-Myers Squibb Manufacturing Company (BMS) facility located in Humacao, Puerto Rico. The investigation was conducted as part of the design of the third phase of the Interim Corrective Measure (ICM) being implemented at the Building 5 Area Solid Waste Management Unit. The ICM is being conducted by BMS as part of the RCRA Corrective Action Program. The objective of the ICM is to remove contaminated soil acting as a source of groundwater contamination. The ICM Work Plan (Interim Corrective Measure Work Plan, Revision 1.0, August 2004) was approved by EPA in December 2004.

The soil investigation was conducted following similar investigations in adjacent Area A and Area B. The area of investigation described in this report is designated Area C and D. The location of Area C and D is shown on a site plan in Figure 1.

The objectives of the soil investigation are as follows:

- To determine the bottom depth of clean soil within Area C and D which may be reused as backfill
- To provide a contamination profile within Area C and D to aid in planning of the excavation process, including estimation of volumes of soil that may be shipped directly off-site for disposal and of soil likely to require on-site treatment in a biopile prior to off-site disposal
- To test the soil from impacted areas for bulk density (dry basis) to determine the weight of soil per unit volume

The following sections present a summary of the scope of the soil investigation and a discussion of the soil investigation results.

## 2.0 Summary of Activities Performed

The soil investigation was performed to define excavation Areas C and D. For the purposes of locating soil borings, the area was divided into 39 cells, each of about 560 ft<sup>2</sup> (20 ft by 28 ft) as shown in Figure 1.

A soil boring was performed at the approximate center of each of the cells. Soil boring locations are identified as C1 through D39. The borings were completed by the direct push method. Soil cores were continuously screened for evidence of contamination using a photoionization detector (PID) and by visual and olfactory means in order to qualitatively confirm the contaminated soil interval. Soil borings were performed by GeoEnviroTech, Inc., of Guaynabo, Puerto Rico. Field oversight and soil sampling was conducted by Mr. Nestor Rivera, PG, of AMAI. Soil borings were completed between July 9 and 16, 2007. Soil boring logs are presented in Appendix A.

In order to determine the maximum depth of clean soil within each cell, a soil sample was collected for laboratory analysis at a depth interval immediately above the inferred impacted soil zone. At several locations the impacted zone was too shallow for a clean soil sample. The top of the impacted zone was estimated based on PID readings and visual and olfactory evidence of contamination. Soil samples were also collected for laboratory analysis from the impacted zone to correlate PID readings and quantitative chemical analyses which will assist in the classification of soils during the excavation phase. Duplicate soil samples were collected at four sample locations.

Soils samples were analyzed for Area C and D Constituents of Concern (COC) including acetone, ethylbenzene, xylene, MIBK, and toluene by SW-846 Method 8260B and methanol by SW-846 Method 8015. In addition, five soil samples collected from within the impacted zone were analyzed for bulk density by ASTM 2937-94. Laboratory analysis was conducted by Accutest Laboratories of Dayton, New Jersey.

Following completion the borings were filled with a cement grout. The surface was finished with cold mix asphalt at locations within the road.

## 3.0 Results of Soil Investigation

In order to evaluate the suitability of shallow soil for reuse as backfill in the area, soil testing results were compared to Soil Screening Levels (SSL) for the migration-to-groundwater pathway for a dilution-attenuation factor of 20 (*Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites, USEPA, 2002*), as proposed in the ICM Work Plan and agreed to by EPA. Analytical results, as well as SSLs for the constituents of concern, are presented in Table 1. Also included in Table 1 are the analytical results of the soil samples collected from within the impacted soil zone. Laboratory analytical reports are presented in Appendix B.

The following observations can be made based on the soil sampling results:

- Of the 39 planned soil boring locations only location C11 was not completed due to the presence of subsurface utilities.
- Area C and D soils are impacted by xylenes, ethylbenzene, MIBK, acetone, methanol and toluene. Impacted soils were encountered as shallow as 1 foot below ground surface (bgs) at C13 and surrounding cells to depth of up to 17.5 feet bgs at C9.
- The maximum concentrations of xylenes were detected in borings C12 and C16 which are adjacent to the former Building 5 sump. The maximum concentration of methanol was detected in boring C26.
- Toluene exceeded the Tier 2 level at only two boring locations, C12 and C16, adjacent to the former Building 5 sump.
- The impacted soils in Area C and D are delineated by soil borings C1 C4 to the south and by borings D37 - D39 to the north. No impacted soil was observed in these borings and they provide a boundary for the extent of impact. Analytical results confirm no impact at these locations.
- Soil borings C7, C19, D23, D24, D25, D30, and D-35 were not impacted based on visual evidence and PID readings. Laboratory analytical results confirm excavation will not be necessary at these locations.
- PID results indicate limited clean soil cover at borings C5, C9, C10, C13, C14, and, C17. At these locations impacted soil was encountered at depth of 1-1.5 feet bgs.

• PID results indicated shallow impacted soil at borings D31 and D32 which is separated by clean soil overlying second deeper zone of impacted soil.

Figure 2 presents profiles of each cell identifying the clean soil horizon, the potentially clean soil horizon, and, the impacted soil horizon. Cells with no impacted soil were included for reference.

The results of soil bulk density (dry weight) tests are presented in Table 2. Laboratory results are in Appendix A. The values range from 0.8 grams per milliliter (g/ml) to 1.7 g/ml with an average value of 1.4 g/ml.

The data collected during this investigation will be used in the ICM implementation process in the following ways:

- The data will be used to identify two areas of excavation (Area C and D) of approximate equal volume for treatment in the biopile.
- Based on the depths of clean material, the volume of soil to be excavated can be
  calculated to ensure that sufficient space is made available on surface for temporary
  staging.
- The PID data will be used to determine the likely volume of potentially clean soil, which will be stockpiled temporarily and analyzed before a decision is made as to reuse as backfill.
- The PID data will be used to provide guidance as to the required depth of excavation within each cell. At some cells (C9, C10, and C13) dewatering may be necessary due to the depth of impacted soil.

Table 1
Soil Sampling Results
Area C and D Predesign Investigation
Bristol-Myers Manufacturing Company
Humacao, Puerto Rico

(Page 1 of 3)

G 1 ID	m' 1 T 1	E' 0.1 1		G 2		G 4	G 4D			G (D
Sample ID	Tier 1 Level	Tier 2 Level	C-1	C-2	C-3	C-4	C-4D	C-5	C-6	C-6D
Sample Depth	RCRA	EPA SSLs	(9.5-10)	(9.5-10)	(10.5-11)	(9.5-10)	(9.5-10)	(5.5-6)	(12-12.5)	(12-12.5)
Sample Date	Subtitle D		11-Jul-07	13-Jul-07	11-Jul-07	16-Jul-07	16-Jul-07	13-Jul-07	13-Jul-07	13-Jul-07
Reporting units are							Duplicate			Duplicate
Acetone	1,600,000	16,000	61.2	88.8	466	55.4	78.4	295,000	ND	13,000
Ethylebenzene	100,000	13,000	ND	ND	ND	15.5	13.0	171,000	4,770	25,900
Methanol		75,000	1,170	8,110	4,250	2,180	19,500	59,700	11,900	11,900
MIBK	330,000	19,000	ND	5.3 J	113	14.2	4.1	496,000	328	15,100
Toluene	100,000	12,000	ND	ND	ND	1.6	0.94	ND	ND	68.8
Xylenes	300,000	190,000	ND	187	5.3	19.5	15.5	661,000	18,300	110,000
Any value exceeding	SSLs are shown shad	led.								
Sample ID	Tier 1 Level	Tier 2 Level	C-7	C-8	C-9	C-10	C-12	C-13	C-14	C-14D
Sample Depth	RCRA	EPA SSLs	(4.5-5)	(5.5-6)	(9.5-10)	(11-11.5)	(5.5-6)	(4-4.5)	(6.5-7)	(6.5-7)
Sample Date	Subtitle D		11-Jul-07	12-Jul-07	13-Jul-07	13-Jul-07	12-Jul-07	12-Jul-07	13-Jul-07	13-Jul-07
Reporting units are	in ug/kg.									Duplicate
Acetone	1,600,000	16,000	1,860	132,000	170,000	13,600	ND	672,000	81,200	80,600
Ethylbenzene	100,000	13,000	1,410	56,600	433,000	52,700	955,000	464,000	71,600	130,000
Methanol		75,000	610	1,650	79,300	6,260	1,770	59,500	14,700	15,000
MIBK	330,000	19,000	10,800	131,000	53,700	18,100	111,000	1,240,000	ND	220,000
Toluene	100,000	12,000	34.8 J	365	9,130	ND	19,400	4,040 J	ND	ND
Xylenes	300,000	190,000	4,240	227,000	1,550,000	219,000	3,290,000	1,780,000	296,000	529,000
Any value exceeding	SSLs are shown shad	led.								
Sample ID	Tier 1 Level	Tier 2 Level	C-15	C-15	C-16	C-16	C-17	C-17	C-18	C-19
Sample Depth	RCRA	EPA SSLs	(5-5.5)	(7.5-8)	(1.5-2)	(9.5-10)	(0.5-1)	(8.5-9)	(6-6.5)	(4.5-5)
Sample Date	Subtitle D		11-Jul-07	11-Jul-07	12-Jul-07	12-Jul-07	11-Jul-07	11-Jul-07	12-Jul-07	11-Jul-07
Reporting units are	in ug/kg.									
Acetone	1,600,000	16,000	39.5	ND	67.7	ND	349 J	201,000	2,070	41.6
Ethylbenzene	100,000	13,000	31.5	220,000	1.1	2,490,000	319	53,100	2,290	ND
Methanol		75,000	ND	865	2,840	5,830	415	10,800	692	1,020
MIBK	330,000	19,000	ND	13,400	ND	ND	188 J	271,000	76,300	ND
Toluene	100,000	12,000	ND	555 J	ND	16,700	ND	360	ND	ND
Xylenes	300,000	190,000	67.1	787,000	3.9	10,000,000	154	215,000	9,610	0.98 J
	SSLs are shown shad					, , ,			· · · · · · · · · · · · · · · · · · ·	
	,									

Table 1
Soil Sampling Results
Area C and D Predesign Investigation
Bristol-Myers Manufacturing Company
Humacao, Puerto Rico

(Page 2 of 3)

Sample ID	Tier 1 Level	Tier 2 Level	D-20	D-20	D-21	D-21	D-22	D-22	D-23	D-23
Sample Depth	RCRA	EPA SSLs	(0.5-1)	(5.5-6)	(1-1.5)	(5-5.5)	(3-3.5)	(5.5-6)	(3.5-4)	(9-9.5)
Sample Date	Subtitle D		10-Jul-07	10-Jul-01	10-Jul-07	10-Jul-07	10-Jul-07	10-Jul-07	10-Jul-07	10-Jul-07
Reporting units are	in ug/kg.									
Acetone	1,600,000	16,000	12.9	2,010	146	215,000	98,000	146,000	118	187
Ethylebenzene	100,000	13,000	25.4	13,100	39,200	776,000	76,400	252,000	ND	2.4
Methanol		75,000	186	1,370	164	7,300	7,820	9,050	254	223
MIBK	330,000	19,000	ND	4,790	25.4	1,710,000	127,000	477,000	7.0	147
Toluene	100,000	12,000	ND	ND	ND	3,380 J	ND	3,630	ND	ND
Xylenes	300,000	190,000	77.1	64,100	309	2,990,000	329,000	1,110,000	ND	7.8
Any value exceeding	SSLs are shown shad	led.								
Sample ID	Tier 1 Level	Tier 2 Level	D-24	D-24	D-25	D-26	D-26	D-26D	D-27	D-27D
Sample Depth	RCRA	EPA SSLs	(4.5-5)	(7.5-8)	(10-10.5)	(6.5-7)	(9.5-10)	(9.5-10)	(5-5.5)	(5-5.5)
Sample Date	Subtitle D		10-Jul-07	10-Jul-07	10-Jul-07	11-Jul-07	11-Jul-07	11-Jul-07	13-Jul-07	13-Jul-07
Reporting units are	in ug/kg.							Duplicate		Duplicate
Acetone	1,600,000	16,000	24.9	144	14.9	647 J	346,000	309,000	538,000	415,000
Ethylbenzene	100,000	13,000	ND	3.8	ND	1.5	86,400	40,100	3,090	1,870
Methanol		75,000	803	240	219	988	3,700,000	3,340,000	2,650,000	2,650,000
MIBK	330,000	19,000	ND	182	13.1	ND	507,000	417,000	235,000	223,000
Toluene	100,000	12,000	ND							
Xylenes	300,000	190,000	ND	15.0	ND	5.4	394,000	172,000	13,000	9,690
Any value exceeding	SSLs are shown shace	led.								
Sample ID	Tier 1 Level	Tier 2 Level	D-28	D-28	D-29	D-30	D-31	D-31	D-32	D-32
Sample Depth	RCRA	EPA SSLs	(3.5-4)	(7-7.5)	(6.5-7)	(10.5-11)	(1.5-2)	(10.5-11)	(6.5-7)	(11-11.5)
Sample Date	Subtitle D		13-Jul-07	13-Jul-07	12-Jul-07	11-Jul-07	11-Jul-07	11-Jul-07	11-Jul-07	11-Jul-07
Reporting units are	in ug/kg.									
Acetone	1,600,000	16,000	78.5	47,200	239,000	584 J	ND	109,000	ND	28,900 J
Ethylbenzene	100,000	13,000	66.4	136,000	465,000	ND	2,000	5,630	355	1,000,000
Methanol		75,000	711	14,800	10,700	2,010	276	54,900	313	1,900
MIBK	330,000	19,000	21.2	131,000	662,000	59.6	3,440	78,200	5,590	232,000
Toluene	100,000	12,000	ND	ND	ND	ND	36.4 J	ND	ND	2,930 J
Xylenes	300,000	190,000	67.0	551,000	1,830,000	7.4	7,490	26,900	1,270	4,030,000
Any value exceeding	SSLs are shown shad									

Table 1
Soil Sampling Results
Area C and D Predesign Investigation
Bristol-Myers Manufacturing Company
Humacao, Puerto Rico

(Page 3 of 3)

Sample ID	Tier 1 Level	Tier 2 Level	D-33	D-33	D-34	D-34	D-35	D-35	D-36	D-36	
Sample Depth	RCRA	EPA SSLs	(5.5-6)	(8.5-9)	(4-4.5)	(6.5-7)	(1-1.5)	(6-6.5)	(6-6.5)	(10-10.5)	
Sample Date	Subtitle D		10-Jul-07	10-Jul-07	10-Jul-07	10-Jul-07	10-Jul-07	10-Jul-07	9-Jul-07	8-Jul-07	
Reporting units are in ug/kg.											
Acetone	1,600,000	16,000	72.2	289 J	162	26,600	514 J	792	84.6	ND	
Ethylbenzene	100,000	13,000	112	13,200	27.4	154,000	1,460	ND	2,770	73,500	
Methanol		75,000	555	687	321	3,470	368	1,760	NA	NA	
MIBK	330,000	19,000	2.3 J	141 J	241	243,000	1,980	3,800	1,300	ND	
Toluene	100,000	12,000	ND	ND	ND	ND	ND	ND	1.1	ND	
Xylenes	300,000	190,000	195	45,300	20.3	576,000	5,890	21.8	2,320	283,000	

Any value exceeding SSLs are shown shaded.

Sample ID	Tier 1 Level	Tier 2 Level	D-37	D-38	D-39
Sample Depth	RCRA	EPA SSLs	(9.5-10)	(9-9.5)	(9.5-10)
Sample Date	Subtitle D		11-Jul-07	9-Jul-07	9-Jul-07
Reporting units are	in ug/kg.				
Acetone	1,600,000	16,000	55.1	352 J	34.7
Ethylbenzene	100,000	13,000	ND	14.5	13.0
Methanol		75,000	207	NA	NA
MIBK	330,000	19,000	ND	174	5.4
Toluene	100,000	12,000	ND	1.6	ND
Xylenes	300,000	190,000	0. 69 J	50.2	46.5
Any value exceeding	SSLs are shown shad	led.		<u> </u>	

J - indicates an estimated value

ND - not detected

NA - constituent not analyzed

Notes:

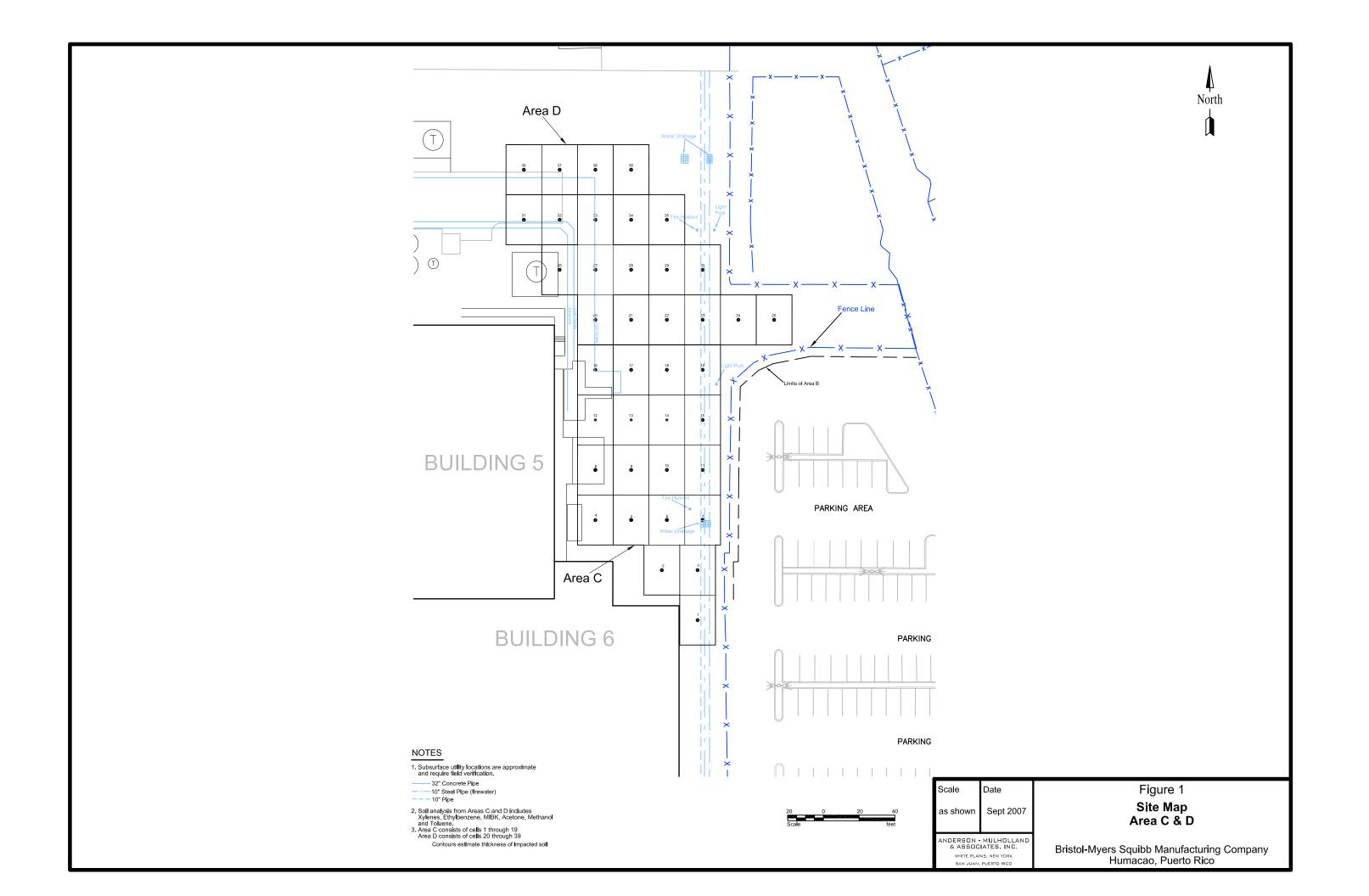
<sup>1.</sup> Tier 1 Levels represent aternative land disposal restriction treatment standards for contaminated media (i.e., ten times the universal treatment standard) in accordance with 40CFR \$268.49(c)(1)(c).

<sup>2.</sup> Tier 2 Levels represent EPA soil screening levels (SSLs) for the migration to groundwater pathway for a dilution-attenuation factor (DAF) of 20. Where EPA SSLs were not available (i.e., MIBK), EPA Region III migration to groundwater SSLs were used (EPA, 2001b; EPA, 2003).

Table 2
Soil Bulk Density
Area C and D Predesign Investigation
Bristol-Myers Manufacturing Company
Humacao, Puerto Rico

(Page 1 of 1)

Sample ID	Sample Depth	Sample Date	<b>Bulk Density</b>	Soil Type
	(ft bgs)		(Dry Basis)	
Reporting units are in g/n	ıl			
C-6	(12-12.5)	13-Jul-07	1.7	F-M SAND
C-15	(7.5-8.5)	11-Jul-07	1.4	Silty SAND
C-17	(8.5-9.5)	11-Jul-07	0.8	Clayey SILT
D-24	(7-8)	10-Jul-07	1.6	Silty CLAY
D-34	(6-7)	10-Jul-07	1.5	Sandy CLAY



#### Figure 2 Cell Profiles Area C and D Predesign Report

	Cell 1	Cell 2	Cell 3	
de a de	Cell I	Cell 2	Cell 3	de a de
depth				depth
0.5		round surfac		
0.5	0	0	0	0.5
1				1
1.5				1.5
2				2
2.5				2.5
3				3
3.5				3.5
4				4
4.5				4.5
5				5
5.5				5.5
6	Clean	Clean	Clean	6
6.5				6.5
7				7
7.5				7.5
8				8
8.5				8.5
9				9
9.5				9.5
10				10
10.5				10.5
11				11
11.5	0	0	0	11.5
12				12
volume	0 cy	0 cy	0 cy	

	Cell 4	Cell 5	Cell 6	Cell 7	
depth		000	<b></b>		depth
аорит		ground	surface		doptii
0.5	0	ground	- Carrage	0	0.5
1		Clean			1
1.5		1811			1.5
2		2931			2
2.5					2.5
3					3
3.5					3.5
4					4
4.5					4.5
5					5
5.5		1291			5.5
6		2637			6
6.5	Clean		Clean	Clean	6.5
7			378		7
7.5					7.5
8			481		8
8.5					8.5
9			34		9
9.5					9.5
10		1273	3870		10
10.5		2165			10.5
11		283			11
11.5	0	25			11.5
12		1	3406		12
12.5			225		12.5
13			43		13
13.5			3	0	13.5
14					14
volume	0 cy	187 cy	52 cy	0 cy	

	Cell 8	Cell 9	Cell 10	Cell 11	
depth					depth
		ground	surface		
0.5					0.5
1		Clean			1
1.5		2088	Clean	Clean	1.5
2		1794	2460		2
2.5				No boring	2.5
3				completed	3
3.5	Clean				3.5
4	42				4
4.5	33				4.5
5	121				5
5.5	1823			Assume	5.5
6				impacted	6
6.5					6.5
7					7
7.5					7.5
8	830				8
8.5	501				8.5
9	404				9
9.5					9.5
10	104				10
10.5	146				10.5
11	51		3305		11
11.5			36		11.5
12			196		12
12.5			533		12.5
13			221		13
13.5			609		13.5
14			36		14
14.5			5		14.5
15			1		15
15.5					15.5
16		4005			16
16.5		1685			16.5
17		1517			17
17.5		1029			17.5
18		458			18
18.5		285			18.5
19		322			19
volume	83 cy	342 cy	249 cy	187 cy	

	Cell 12	Cell 13	Cell 14	Cell 15	
depth					depth
		ground	surface		
0.5					0.5
1		Clean	Clean		1
1.5		849	2888		1.5
2		5812			2
2.5	Clean	9999			2.5
3	34				3
3.5	254				3.5
4	1450				4
4.5					4.5
5				Clean	5
5.5				89	5.5
6					6
6.5					6.5
7				224	7
7.5				9999	7.5
8					8
8.5					8.5
9		5026			9
9.5	1107	1468		2007	9.5
10	50	928		0	10
10.5	80	177		0	10.5
11	124	599	2170		11
11.5		760	818		11.5
12		373	7		12
volume	124 cy	217 cy	217 cy	52 cy	

		_			
	Cell 16	Cell 17	Cell 18	Cell 19	
depth					depth
		ground	surface		
0.5					0.5
1		Clean			1
1.5					1.5
2	Clean	787			2
2.5			Clean		2.5
3					3
3.5					3.5
4					4
4.5					4.5
5					5
5.5					5.5
6				Clean	6
6.5	1995				6.5
7			45		7
7.5			18		7.5
8					8
8.5					8.5
9		1132			9
9.5		570			9.5
10		320			10
10.5		7.1			10.5
11					11
11.5					11.5
12	2256				12
12.5	100				12.5
13					13
volume	135 cy	166 cy	83 cy	0 cy	

	Cell 20	Cell 21	Cell 22	Cell 23	Cell 24	Cell 25	
depth							depth
			ground	surface			
0.5							0.5
1			188				1
1.5							1.5
2		507					2
2.5		507					2.5
3		1156					3
3.5							3.5
4							4
4.5			208				4.5
5	Clean		1010				5
5.5							5.5
6		1115		Clean	Clean	Clean	6
6.5	81	412	1228				6.5
7	52	295	80				7
7.5		148	93				7.5
8							8
8.5							8.5
9							9
9.5							9.5
10							10
10.5							10.5
11							11
11.5							11.5
12							12
volume	21 cy	104 cy	83 cy	0 cy	0 cy	0 cy	

	Cell 26	Cell 27	Cell 28	Cell 29	Cell 30			
depth						depth		
ground surface								
0.5						0.5		
1						1		
1.5						1.5		
2				Clean		2		
2.5		Clean		869		2.5		
3		308		982		3		
3.5						3.5		
4						4		
4.5			Clean			4.5		
5			209			5		
5.5		1377	2572		Clean	5.5		
6		1365				6		
6.5						6.5		
7						7		
7.5						7.5		
8	Clean					8		
8.5						8.5		
9						9		
9.5						9.5		
10	2192					10		
10.5				481		10.5		
11	48			112		11		
11.5	44			6		11.5		
12						12		
12.5		1816				12.5		
13		760				13		
13.5		301	64			13.5		
14		127	16			14		
volume	31 cy	166 cy	166 cy	176 cy	0 cy			

	Cell 31	Cell 32	Cell 33	Cell 34	Cell 35	
depth						depth
		g	round surfac	e		
0.5	700					0.5
1	1400	2194				1
1.5	360					1.5
2	Clean	Clean				2
2.5						2.5
3						3
3.5						3.5
4						4
4.5				Clean		4.5
5				1030		5
5.5						5.5
6				1262		6
6.5	Clean					6.5
7	240		Clean		Clean	7
7.5	286					7.5
8						8
8.5						8.5
9	173			292		9
9.5	199			12		9.5
10	346	Clean		11		10
10.5	664	446		26		10.5
11	24	9999		1		11
11.5	10	7157				11.5
12		113				12
12.5		81				12.5
13		428				13
13.5		495				13.5
14		293				14
volume	52 cy	104 cy	0 cy	83 cy	0 cy	

depth				Cell 39					
uopii.					depth				
ground surface									
0.5		g			0.5				
1					1				
1.5					1.5				
2					2				
2.5					2.5				
3					3				
3.5					3.5				
4					4				
4.5					4.5				
5					5				
5.5					5.5				
6		Clean	Clean	Clean	6				
6.5					6.5				
7					7				
7.5					7.5				
8					8				
8.5					8.5				
9					9				
9.5	Clean				9.5				
10					10				
10.5					10.5				
11					11				
11.5					11.5				
12					12				
volume	21 cy								



Appendix A

Soil Boring Logs

110 Corpora	VIAI ate Park Drive New York 10604	SOIL BOR	RING LOG		BORING NUMBER C - 1
PROJECT NAME: Bristol Myers Sq PROJECT NO: Interim Corrective N			Humacao, PR  GeoEnvirotech	DATE:	07/11/07
SAMPLER TYPE/DIAMET	• • •	b-core/ 1.75 inch BORING METH		DRILLER: LOGGED BY:	Abraham Nuniz  Nestor Rivera

FF SUR	PTH ROM RFACE EET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
	-				<u>,                                      </u>	
	1	33	0			(0-33") Gravelly silty SAND, brown light brown, slightly moist, loose, gravel fragments
			0			
	3		0			(33-60") No recovery
	4					
	5					
		60	0			(60-67") Slough of material from top.  (67-120") Sandy silty CLAY, yellow light yellow, gray with black veins, slightly moist, stiff (113-120") fine to medium SAND
	6					
			0			
	' <u> </u>		0			
	8					
			0			
<del></del>	y					
	10		0	(9.5-10)		
		28	0			(120-125") Slough of material from top (125- end of boring) Sandy silty CLAY, black gray purple-red, moist to we
<u> </u>	11					
			0			
	12					
			0			
-	13					End of Boring

110 Co	AMAI proprate Park Drive pains, New York 10604		SOIL BORIN	IG LOG		BORING NUMBER C-2
PROJECT NAME: Bristol Myers Sq  PROJECT NO: Interim Corrective M			LOCATION:	Humacao, PR  GeoEnvirotech		
			-		DATE:	07/13/07
	(II)			Discret Dook	DRILLER:	Abraham Nuniz
SAMPLER TYPE/DIAME	ETER (IN): 5 π Macro	-core/ 1.75 inch	BORING METHOD:	Direct Push		
TOTAL DEPTH DRILLE	ED (FT):	13	DEPTH TO WATER (F	T): <u>na</u>	LOGGED BY:	Nestor Rivera

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
					(0-8") Concrete
	47	0			
1					(8-20") Backfill, Gravelly sandy silty CLAY, gray, green, brown to light brown, stif slightly moist, angular gravel
'					
		0			
2					
		0			(28-49") Sandy silty CLAY, green yellow-brown gray, slightly mois some fine to medium gravel
		Ü			come into to modum graver
3					
		0			
4					
					(48-60") SAND
		0			(40°00 ) SAND
5					
	58	0			(60-111") Sandy silty CLAY fine to medium grained, brown gray yellow-brown, slightly moist, very hard, some vegetation
6					
		0			
7					
		0			
0		0			
° _					
		0			
9					
		0			(111-118") SAND and silty SAND fine to medium grained, gray red, loose, moist
		J	(9.5-10)		
10		1			
					(120-138") Slough of material from top, gravelly sandy silty CLAY, green brown, very soft,
<u> </u>	36	0			wet to saturated
11					
'' <u></u>					
<u> </u>		0			(420.45Cll) Conducitly CLAV fine to modium grained and are in-
					(138-156") Sandy silty CLAY fine to medium grained, gray brown, moist, sof
12					
		0			
		-			
13					End of Boring

AMAI 110 Corporate Park Drive White Plains, New York 106		SOIL BORING LOG	BORING NUMBER C-3		
-	iristol Myers Squibb	LOCATION: Humacao, PR  CONTRACTOR: GeoEnvirotech	DATE:	07/11/07	
SAMPLER TYPE/DIAMETER (IN): TOTAL DEPTH DRILLED (FT):	5 ft Macro-core/ 1.75	5 inch BORING METHOD: Direct Push  DEPTH TO WATER (FT): na	DRILLER:	Abraham Nuniz Nestor Rivera	

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
	12	0			(0-12") sandy silty CLAY medium to coarse, yellow-dark brown, moist, stiff, some fine gravel
·		0			
2					
		0			
、		0			
4		1			
<del></del>		1			
5					(CO C7II) Claush of material from ton
	37	1			(60-67") Slough of material from top (67-97") Sandy silty CLAY fine, yellow-dark brown with black veins, slightly moist, stiff
6					
7		1			
·		1			
8					
<del></del>		1			(97-120") No recovery
9					
10	60		(10.5-11)		(120-156") Slough of material from top, wet to saturated
11					(120-144") Silty SAND and sandy SILT medium coarse, loose, wet, soft
12					End of Boring
<u></u> -					

ANAI 110 Corporate Park Drive White Plains, New York 10604				SOIL BORING LOG				Ī	C - 4	
		Bristol Myers Squarterim Corrective M		LOCATION: CONTRACTOR:	Humaca Ge	o, PR eoEnvirotech	_	DATE: _		07/16/07
		5 ft Macro	o-core/ 1.75 inch	BORING METHOD:	 (FT):	Direct Push	_	DRILLER: _		odrigues/ A. Nuniz
SAMPLER TYPE/DIAMETER (IN): TOTAL DEPTH DRILLED (FT):		5 ft Macro-core/ 1.75 inch		_	BORING METHOD: Direct Push DEPTH TO WATER (FT): 1'			LOGGED BY:	N	Nestor Rivera

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
(, LL1)					
	31	0			(0-10") Backfill, gravelly sandy silty CLAY, brown gray black, slightly moist, soft
	, J				(10-31") Sandy silty CLAY, yellow-brown green black veins, slightly moist, stiff
¹					
<u> </u>		0			
2					
		0			
3					(31-60") No recovery
。					
<u> </u>					
4					
5					
	50	0			(60-102") Sandy silty CLAY fine, brown gray white, slightly moist, soft to stiff
	56	0			
6					
		0			
7					
		0			
8					
		0			(102-116) Sandy silty CLAY, gray red yellow-brown, slightly moist to moist, stiff to soft
9					
		0			
10			(9.5-10)		
10					(120-137") Slough of material from top, sandy silty CLAY chunks, saturated
<u> </u>	25	0			
11					
		0			(407.445))) O carte alle Ol AV and from the care
12					(137-145") Sandy silty CLAY medium to coarse grained, gray red yellow-brown  End of Boring
12					

	AMAI orporate Park Drive lains, New York 10604	SOIL BORIN	NG LOG	BORING NUMBER  C-5		
PROJECT NAME:PROJECT NO:	Bristol Myers Squ Interim Corrective M	<del></del>	Humacao, PR GeoEnvirotech	DATE:	07/13/07	
SAMPLER TYPE/DIAM		o-core/ 1.75 inch BORING METHOD:  16 DEPTH TO WATER (F	Direct Push	DRILLER:	William Rodriguez / Abraham Nuniz Nestor Rivera	

DEPTH FROM	RECOVERY	PID	SAMPLE	BLOW	LITHOLOGIC DESCRIPTION AND COMMENTS
SURFACE (FEET)	(INCHES)	(ppm)	DESIGNATION	COUNT	
	30	0 4			(0-12") Backfill, gravelly sandy silty CLAY, brown to yellow-brown, slightly moist, hard rock fragments, (9-12") gravel
		1811 2931			(12-30") Sandy silty CLAY, brown yellow-brown gray, slightly moist, stiff, some gravel size rock fragments
3		2931			(30-60") No recovery
4					
5					
6	59	1291 2637	(5.5-6)		(60-102") Sandy silty CLAY, brown yellow-brown gray with black veins, slightly moist, stiff, plastic
7		773 850			
8		680 230			
9		626 41			(102-119") SAND locally more CLAYEY, gray light brown to brown, moist, loose
10		7 19			
	30	1273 2165			(120-138") Slough of material from top, sandy silty CLAY, saturated
12		283 25			(138-150") SAND, medium to coarse, wet to saturated, loose
13	42	5 1			(144-186") SAND coarse, gray purple, saturated to wet, loose

110 Corporate Park Drive White Plains, New York 10604

#### **SOIL BORING LOG** Page 2 of 2

BORING NUMBER

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	USCS CODE	LITHOLOGIC DESCRIPTION AND COMMENTS
		25			
		18			
14					
		7			
		4			
15		6			
		6 2			
16		2			End of Boring at 16 ft. bgs
<u> </u>					
<u> </u>	_				

110 Co	AMAI prporate Park Drive ains, New York 10604	SOIL BO	RING LO	G		BORING NUMBER C-6
PROJECT NAME: PROJECT NO:	Bristol Myers Squ Interim Corrective M		LOCATION: Humacao, PR  CONTRACTOR: GeoEnvirotech			07/13/07
SAMPLER TYPE/DIAME	.,	p-core/ 1.75 inch BORING METI  16 DEPTH TO WA	_	Direct Push	DRILLER:	Abraham Nuniz Nestor Rivera

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
		0			(0-6") Concrete
	44	35			(6-44") Sandy silty CLAY, green brown yellow-brown gray, slightly moist, very hard angular fragments
		51			
2		63			
		21 1			
3		1			
4					(44-60") No recovery
5					
	59	22 1			(60-69") Slough of material from top, sandy silty CLAY and gravelly SAND, concrete fragments
6					(69-105") Sandy silty CLAY fine, brown light brown black and gray veins, slightly moist, very hard
		6 76			
		378			
8		71			
		481			
9		142			(105-119") SAND fine to coarse, green gray, slightly moist, loose
		34 26			
10		20			
	42	387 117			(120-130") Slough of material from top, gravelly sandy silty CLAY
11					(130-138") Sandy silty CLAY, gray brown, slighlty moist, well rounded
		180 181			(138-162") SAND fine to medium grained, red gray, loose, quartz/ lithic fragments
12	60	3406 225	(12-12.5)		(144-180") Slough of material from top, SAND fine to coarse, saturated
13		220			

110 Corporate Park Drive White Plains, New York 10604

#### **SOIL BORING LOG** Page 2 of 2

BORING NUMBER

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	USCS CODE	LITHOLOGIC DESCRIPTION AND COMMENTS
		45			
		9831			
		0001			
14					
		93			
		441			
15					
		11			(180-204") SAND very coarse, red gray, saturated
		7			
		,			End of Boring at 16 ft. bgs
16					
L					
<u> </u>					
<u> </u>					

AMA 110 Corporate P White Plains, New	ark Drive		SOIL BORING	G LOG	вс	C-7
PROJECT NAME: PROJECT NO:	Bristol Myers Sq Interim Corrective M		LOCATION:  -	Humacao, PR GeoEnvirotech	DATE:	07/11/07
SAMPLER TYPE/DIAMETER (IN): TOTAL DEPTH DRILLED (FT):	5 ft Macro	o-core/ 1.75 inch	BORING METHOD: DEPTH TO WATER (FT):	Direct Push	DRILLER:	Abraham Nuniz  Nestor Rivera

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
1	18	0			(0-18") Gravelly SAND to gravelly sandy silty CLAY, brown to light brown, slightly moist, loose to soft
		0			(18-54") No recovery
		0			
		0			
		0	(4.5-5)		
5	36	0			(60-66") Slough of material from top (66-86") Sandy silty CLAY, light brown gray red and black veins, slightly moist, soft to stiff
		13.4			
7		14.3			(86-96") SAND medium to coarse, gray red light brown, moist to wet, loose
8					(96-120") No recovery
9					
10	40	0			(120-144") Slough of material from top
11		0			
12					(144-156") SAND medium to coarse, gray red black, moist to wet, loose
13					

AMA 110 Corporate Par White Plains, New Y		SOIL BORIN	G LOG	В	ORING NUMBER C-8	
PROJECT NAME:PROJECT NO:	Bristol Myers Squ Interim Corrective M		LOCATION: CONTRACTOR:	Humacao, PR  GeoEnvirotech	DATE:	07/12/07
SAMPLER TYPE/DIAMETER (IN): TOTAL DEPTH DRILLED (FT):	5 ft Macro	o-core/ 1.75 inch	BORING METHOD:	Direct Push): na	DRILLER: _ LOGGED BY: _	Abraham Nuniz  Nestor Rivera

					<u> </u>
DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
		34			(0-18") Backfill, gravelly sandy silty CLAY, green brown, slightly moist, stiff
	30	51			
1					
		52			
		42			(18-30") Sandy silty CLAY, green light brown, slightly moist, locally some gravel
2					
		33			
					(30-60") No recovery
_					(30-00 ) No recovery
3					
4					
_					
5					
	58	121	(5.5-6)		(60-115") Sandy silty CLAY, red gray yellow-brown, slightly moist to moist, stiff, Fe oxide nodules
	30	1823	(0.0 0)		1 & GAIGE HOURISS
6					
		449			
		950			
7					
		530			
		239			
8					
		830			
		501			
		301			
9					
		404			
		152			(115-118") SAND medium to coarse grained, wet, loose
10					
		104			(120-136") Slough of material from top, loose
	36	146			
		140			
11					
		51			(136-156") SAND medium to coarse, black red, wet to saturated, loose
12					
40					End of horing at 12 ft has
13					End of boring at 13 ft bgs
		<u> </u>		<u> </u>	

PROJECT NAME:         Bristol Myers Squibb         LOCATION:         Humacao, PR           PROJECT NO:         Interim Corrective Measure         CONTRACTOR:         GeoEnvirotech	DATE: 07/13/07
SAMPLER TYPE/DIAMETER (IN):         5 ft Macro-core/ 1.75 inch         BORING METHOD:         Direct Push           TOTAL DEPTH DRILLED (FT):         20         DEPTH TO WATER (FT):         na	DRILLER: Abraham Nuniz  LOGGED BY: Nestor Rivera

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
1	36	1 2			(0-6") Backfill, gravelly sandy silty CLAY, brown yellow-brown, slightly moist, angular gravel fragments  (6-36") Sandy silty CLAY, yellow-brown green with black veins, slightly moist, stiff, some gravel fragments
		2088 1794			oomo gravei nagmente
3		1559 592			(36-60") No recovery
4					
5					
6	60	1986 1330			(60-114") Sandy silty CLAY, brown yellow-brown black gray, slightly moist, stiff
7		1172			
8		1150 1088			
9		1045 1210			
10		1166 1735	(9.5-10)		(400,444)), 5.4.15
11	24	2918 2876			(120-144") SAND medium to coarse, yellow black brown, saturated, loose
12		2043 350 235			(144-192") SAND, same as above
13		1772			(111 102 ) 3/11D, 3dillo da dabovo

110 Corporate Park Drive White Plains, New York 10604

#### SOIL BORING LOG Page 2 of 2

BORING NUMBER

DEPTH FROM SURFACE	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	USCS CODE	LITHOLOGIC DESCRIPTION AND COMMENTS
(FEET)					
		1868			
		1985			
14					
		259			
		212			
15					
		265			
_		207			
16					
		1257			(192-240") SAND, same as above, some gravel fragments
<u> </u>		1685			
17					
		1517			
		1029			
		1029			
18					
		458			
		285			
19					
		322			
		65			
20					End of boring at 20 ft bgs
<u> </u>					
<u> </u>					

AMAI 110 Corporate Park Drive White Plains, New York 10604	SOIL BORING LOG		G NUMBER C-10
PROJECT NO: Bristol Myers S  PROJECT NO: Interim Corrective	·	DATE:	07/13/07
SAMPLER TYPE/DIAMETER (IN): 5 ft Mac TOTAL DEPTH DRILLED (FT):	to-core/ 1.75 inch         BORING METHOD:         Direct Push           16         DEPTH TO WATER (FT):         na	DRILLER:	Abraham Nuniz Nestor Rivera

DEPTH FROM	RECOVERY	PID	SAMPLE	BLOW	LITHOLOGIC DESCRIPTION AND COMMENTS
SURFACE (FEET)	(INCHES)	(ppm)	DESIGNATION	COUNT	
	_				(0-6") Concrete
	36	0			(6-36") Sandy silty CLAY, green yellow-brown, slightly moist, very stiff
1		0			
		2460			
2					
		1312 417			
3					
					(36-60") No recovery
4					
5					
	60	1883			(60-120") Sandy silty CLAY fine, brown yellow-brown green veins (114-120") dark brown, Fe oxide, slightly moist, stiff
6		2278			To oxido, digitily indict, diff
6		1065			
		26			
7		1074			
		348			
8		800			
		795			
9					
		679 245			
10					
<u> </u>	30	107 881			(120-126") Concrete fragments and powder
11		001			(126-144") SAND and silty SAND medium to coarse, green brown black, moist, loose
		3305	(11-11.5)		
12		473			
		36			(144-156") Slough of material from top
		196			
13					

110 Corporate Park Drive White Plains, New York 10604

## **SOIL BORING LOG**

Page 2 of 2

BORING NUMBER

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	USCS CODE	LITHOLOGIC DESCRIPTION AND COMMENTS
		533			(156-192") SAND coarse, saturated, loose
		221			
14		609			
		36			
15		5			
		1			
16					End of Boring at 16 ft bgs
17					
18					
19					
20					
_					

110 Corpora	AAI ate Park Drive New York 10604		SOIL BORIN	G LOG		ING NUMBER C-12
PROJECT NAME: PROJECT NO:	Bristol Myers Squ Interim Corrective M		LOCATION:  CONTRACTOR:	Humacao, PR GeoEnvirotech	DATE:	07/12/07
SAMPLER TYPE/DIAMETER (	. ,	o-core/ 1.75 inch	BORING METHOD:	Direct Push	DRILLER:	Abraham Nuniz Nestor Rivera

	DEPTH FROM	DECOVERY	DID.	CAMPIE	DI CW	LITIOLOGIC DESCRIPTION AND COMMENTS
1	SURFACE	(INCHES)	(ppm)	DESIGNATION	COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
1			ı	I		
1		42	0			(0-22") Backfill, gravelly sandy silty CLAY, light brown, loose
2			0			
15	1		0			
34 258	<u> </u>					
258  1450  (42-60') No recovery  (42-60') No recovery  (42-60') No recovery  (42-60') No recovery  (60-72') Same as above  (72-90') Sandy SiLT/ SAND coarse, black, wet, loose, some cobbles  1107  8  1107  10  10  10  11  11  172  457  (138-150') Sandy silty CLAY, yellow-brown gray violet gray veins, moist, soft, loose	2					(22-42") Gravelly sandy silty CLAY homogenious, gray green yellow-brown, slightly moist, stiff
3			34			
1450 (42-60') No recovery  (42-60') No recovery  (42-60') No recovery  (55-6) (60-72') Same as above  (60-72') Same as above  (72-90') Sandy SILT/ SAND coarse, black, wet, loose, some cobbles  7 1107  8 1107  9 10 10 124 180 (120-138') SAND, brown violet, saturated, loose  11 172 457 (138-150') Sandy silty CLAY, yellow-brown gray violet gray veins, moist, soft, loose			258			
(42-60') No recovery  (42-60') No recovery  (42-60') No recovery  (42-60') No recovery  (60-72') Same as above  (60-72') Same as above  (72-90') Sandy SILT/ SAND coarse, black, wet, loose, some cobbles  7  1107  8  9  10  10  11  11  172  457  (138-150') Sandy silty CLAY, yellow-brown gray violet gray veins, moist, soft, loose	3		1450			
5						(42-60") No recovery
1700	4					
1700						
1700						
1780   (5.5-6)	5		1700			(60-72") Same as above
1462		30		(5.5-6)		
1030  1107  1107  8  9  10  10  10  10  10  11  172  457  (138-150") Sandy silty CLAY, yellow-brown gray violet gray veins, moist, soft, loose	6					
7						(72-90") Sandy SILT/ SAND coarse, black, wet, loose, some cobbles
1107  8	7		1030			
9			1107			
9						
10	8					
10						
10	۵					
11 (120-138") SAND, brown violet, saturated, loose 110 172 (138-150") Sandy silty CLAY, yellow-brown gray violet gray veins, moist, soft, loose	³					
11 (120-138") SAND, brown violet, saturated, loose 110 172 (138-150") Sandy silty CLAY, yellow-brown gray violet gray veins, moist, soft, loose	<u> </u>					
11 172 172 457 (138-150") Sandy silty CLAY, yellow-brown gray violet gray veins, moist, soft, loose	10					
11 172 457 (138-150") Sandy silty CLAY, yellow-brown gray violet gray veins, moist, soft, loose		30				(120-138") SAND, brown violet, saturated, loose
172 457 (138-150") Sandy silty CLAY, yellow-brown gray violet gray veins, moist, soft, loose	11		180			
457 (138-150") Sandy silty CLAY, yellow-brown gray violet gray veins, moist, soft, loose	'' <del></del>		172			
	<del></del>					(138-150") Sandy silty CLAY, yellow-brown gray violet gray veins, moist, soft, loose
	12					
						Defined at 40% has
Refusal at 12ft bgs						κeiusai at i∠π bgs

AMA 110 Corporate Pa White Plains, New Y	rk Drive		SOIL BORING	LOG	В	C-13
PROJECT NO:	Bristol Myers Square Interim Corrective M		LOCATION: H	umacao, PR GeoEnvirotech	DATE: _	07/12/07
SAMPLER TYPE/DIAMETER (IN): TOTAL DEPTH DRILLED (FT):	5 ft Macro	o-core/ 1.75 inch	_BORING METHOD: _DEPTH TO WATER (FT):	Direct Push	DRILLER:	Abraham Nuniz Nestor Rivera

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
	48	45			(0-3") Asphalt
	40	41			(3-20") Backfill, gravelly sandy silty CLAY, green brown, slightly moist, stiff, some angular gravel fragments
1		849			
		5812			(20-48") Gravelly sandy silty CLAY, slightly moist, stiff, some 1.5" angular gravel fragments
2		9999			
3		4380			
s <u></u>		5485			
4					
		9382	(4.5-5)		
5					
	48	518			(60-89") Same as above
6		951			
		1325			
7		2227			
		4073			(89-108") SAND silty coarse grained, wet to saturated, loose, shiny
8		9999			(various, various, va
		5026			
9		1468			
		928			
10		177			
~	30	599			(120-150") Slough of material from top, same as above
11		760			
···		373			
12		203			
		373			
		203			Refusal at 12ft bgs

AMA 110 Corporate Pa White Plains, New Y	rk Drive		SOIL BORING	G LOG		BORING NUMBER C-14
PROJECT NAME: PROJECT NO:	Bristol Myers Squ Interim Corrective M		LOCATION:  CONTRACTOR:	Humacao, PR GeoEnvirotech	DATE:	07/13/07
SAMPLER TYPE/DIAMETER (IN):	4 ft Macro	o-core/ 1.75 inch	BORING METHOD:	Direct Push	DRILLER:	William Rodrigues
TOTAL DEPTH DRILLED (FT):		12	DEPTH TO WATER (FT	: <u>na</u>	LOGGED BY:	Nestor Rivera

DEPTH	DEPTH DEPTH						
FROM Surface	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS		
(FEET)							
					(0-7") Asphalt		
	45	395			(u-r ) Məpridit		
1		333			(7-12") Backfill, gravelly sandy silty CLAY, slightly moist, stiff		
· —		294					
		2888			(12-45") Sandy, silty, CLAY, yellow-brown, gray, brown, slightly moist, stiff some gravel fragments		
2							
		2850					
		2426					
3							
		1559					
		1822					
4		0004			(40 04ll) Conductible CLAV college brown to brown track block alicebile resist exiff		
	46	2021			(48-84") Sandy silty CLAY, yellow-brown to brown gray-black, slightly moist, stiff, some gravel fragments		
5		2587					
		2689					
		2416					
6							
		2169					
		2777	(6.5-7)				
7							
		518			(84-91") Sandy silty CLAY, black green, slightly moist, stiff, some roots		
		596					
8		2704			(06.114") Sondy silty CLAV vollow brown grove maint stiff some grandiquits are all		
	42	2791 2916			(96-114") Sandy silty CLAY, yellow-brown gray, moist, stiff, some grandiorite gravel		
9		2910					
		2308					
		548			(114-138") SAND medium to coarse, black gray violet, wet, loose		
10							
		287					
		2170					
11							
		818					
		7			End of Boring at 12 ft bgs.		
12							

AMA 110 Corporate Pa White Plains, New Y	rk Drive		SOIL BORING	LOG		IG NUMBER C-15
PROJECT NAME: PROJECT NO:	Bristol Myers Squ Interim Corrective Me		LOCATION: <u> -</u> CONTRACTOR:	łumacao, PR GeoEnvirotech	DATE:	07/11/07
SAMPLER TYPE/DIAMETER (IN): TOTAL DEPTH DRILLED (FT):	5 ft Macro	-core/ 1.75 inch	BORING METHOD:	Direct Push	DRILLER:	Abraham Nuniz M. Stein

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
	36	0			(0-8") Gravelly silty SAND, brown, moist (8-36") CLAY with gravel trace sand, brown gray, slightly moist, stiff
		0			
		0			
3 <u></u>					(36-60") No recovery
4					
5	42	0 89	(5-5.5)		(60-68") Silty CLAY, gray, wet, soft (68-72") Sandy SILT, soft, some gravel, light brown, dry
6		0			(72-78") Silty CLAY, gray, moist, stiff (78-84") Silty SAND, gray, moist, stiff
<sup>7</sup>		224 9999	(7.5-8)		(84-102") Silty SAND fine, pink-gray, moist
8 <u></u>		9999 2007	(7.5-8.5)		(102-120") No recovery
9					
10	24	0 8.9			(120-138") SAND medium grained, black, wet
11		2.9			(138-144") SAND medium grained, pink-gray, wet
12					End of Borng at 12 ft bgs

AMAI 110 Corporate Park Drive White Plains, New York 10604		SOIL B	ORING	LOG		BORING NUMBER C-16
PROJECT NAME:PROJECT NO:	Bristol Myers Squ Interim Corrective Me			umacao, PR  GeoEnvirotech	DATE:	07/12/07
SAMPLER TYPE/DIAMETER (IN): TOTAL DEPTH DRILLED (FT):	5 ft Macro	-core/ 1.75 inch BORING MET  13 DEPTH TO W		Direct Push	DRILLER:	Abraham Nuniz  Nestor Rivera

DESTU			1		<u>I</u>
DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
1	24	0			(0-16") Backfill, gravelly sandy silty CLAY,brown gray light green, slightly moist, angular to sub angular fragments
		0	(1.5-2)		(16-24") Sandy silty CLAY, some gravel, slightly moist, soft
2					(24-60") No recovery
3					
4					
5	48	0			(60-72) Slough of material from top
6		11 1955			(72-89) Sandy silty CLAY fine to medium, light green and brown, slightly moist, stiff
7		19			
8		1488 850			(89-108") Sandy silty CLAY/SAND, medium to coarse, black, moist, loose, soft
		851 2088			
9			(9.5-10)		
10	36	1669 2077			(120-150") SAND medium grained, black-violet, saturated, loose
11		2124			
12		2055			(450 450!) Ozguellu eiltu CLAV vellevu bravna ziizbili. zazist ziifi zazzi fizzazzi i
13		100			(150-156") Gravelly silty CLAY, yellow-brown, slightly moist, stiff, some fine sand and roots  End of Boring

AMAI 110 Corporate Park Drive White Plains, New York 10604	SOIL BORING LOG	BORING NUMBER C-17
PROJECT NAME: Bristol Myers PROJECT NO: Interim Corrective	·	ch DATE:07/11/07
SAMPLER TYPE/DIAMETER (IN): 4 ft M TOTAL DEPTH DRILLED (FT):	Direct   1.75 inch   BORING METHOD:   Direct   12   DEPTH TO WATER (FT):   na	DRILLER:         William Rodriguez           t Push         LOGGED BY:         M. Stein

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
	39	16.5 11.6	(0.5-1)		(0-8") Asphalt, fill (8-12") Sandy silty CLAY, gravel, greenish gray
1		344 169			(12-33") Clayey SILT, light brown, slightly moist to moist, stiff to soft, some gravel
3		787 123			(33-39") SILT/ GRAVEL, light brown, slightly moist, soft,up to 2" sub rounded to sub angular fragments.
4					(40.00% C)
5	45	1072 230			(48-60") Clayey SILT and GRAVEL, light brown
6		837 862			(60-72") Same as above, moist, little gravel
7		630 113			(72-93") Silty CLAY, dark brown, moist, stiff
8 <u></u>		29			
9	38	326 1132	(8.5-9) (8.5-9.5)		(98-100) Same as above (100-110") Clayey SILT, some gravel, light brown, soft
10		570 320			(114-120") Clayey SILT, dark brown, moist, stiff
11		7.1 5.7			(120-128") CLAY, brown, wet, soft  (128-134") SAND medium, trace clay, gray-brown, wet
12		4.8			End of Boring at 12 ft bgs.

	AMAI Corporate Park Drive Plains, New York 10604	SOIL BOR	ING LOG		NUMBER C-18
PROJECT NAME: PROJECT NO:	Bristol Myers Squ Interim Corrective M			DATE:	07/12/07
SAMPLER TYPE/DIAM		o-core/ 1.75 inch BORING METHOD:		DRILLER:	Abraham Nuniz Nestor Rivera

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
, ,					
	42	0			(0-8") Asphalt
1	ļ	-			(8-34") Backfill, gravelly sandy silty CLAY
		0			
		386			
3		516			(34-42") Sandy silty CLAY, yellow-brown violet gray with iron concretions, slightly moist, very hard
3		425			very naru
					(42-60") No recovery
4					
5					
3	47	20			(60-72") Slough of material from top, gravelly sandy silty CLAY, gravel
6		64			
		555	(6-6.5)		(72-108") Sandy silty CLAY, brown light brown gray with black veins, slightly moist, very hard
7		45			
′ <del></del>		18			
8		14			
。		4			
9		4			
9		1			(108") Sandy silty CLAY, black brown to light brown, slightly moist, stiff
		1			
10		15			(120-126") Slough of material from top
	48	11			(126-153") Sandy silty CLAY, some brown to light brown, slightly moist, stiff to soft, fine sand
11		107			
		424			
12		149			
		3			(153-165") SAND silty sand medium to coarse, wet, loose
13					

110 Corporate Park Drive White Plains, New York 10604

#### **SOIL BORING LOG** Page 2 of 2

BORING NUMBER C-18

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	USCS CODE	LITHOLOGIC DESCRIPTION AND COMMENTS
					  -
		2			
		1			(165-168") Silty CLAY, red brown, wet, very soft
14					End of Boring at 14 ft bgs
					· ·
<u> </u>					
<u> </u>					
<u> </u>					

AMA 110 Corporate Pa White Plains, New Y		SOIL BORIN	NG LOG		BORING NUMBER C-19	
PROJECT NAME:PROJECT NO:	Bristol Myers Squ Interim Corrective M		LOCATION: Humacao, PR  CONTRACTOR: GeoEnvirotech		DATE:	07/11/07
SAMPLER TYPE/DIAMETER (IN):	4 ft Macro	-core/ 1.75 inch	BORING METHOD:	Direct Push	DRILLER:	Abraham Nuniz
TOTAL DEPTH DRILLED (FT):		12	DEPTH TO WATER (F	-T): <u>na</u>	LOGGED BY:	M. Stein

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
1	34	0			(0-8") Asphalt, fill (8-34") Sandy clayey SILT and GRAVEL, greenish gray, slightly moist, stiff
		0			
3		0			
		0			
5	18	0 3.1	(4.5-5)		(48-54") Same as above, soft (54-66") SAND medium to coarse, green, wet, 1.5" sub angular gravel
6		0 5.3			
7		0 4.2			
8 <u></u>					
9	48	3 4.5			(96-106") Clayey SAND, some gravel, greenish gray, wet, soft  (106-144") SAND medium to coarse, greenish gray to pinkish gray, saturated
10		4.9 10.7			
10		3.9 0.1			
12		1.4			End of Boring at 12 ft bgs.
					y y -

AMAI 110 Corporate Park White Plains, New Yor		SOIL B	ORING LO	og		BORING NUMBER D-20		
PROJECT NAME: Bristol Myers Squ PROJECT NO: Interim Corrective M				cao, PR GeoEnvirotech	DATE:	07/10/07		
SAMPLER TYPE/DIAMETER (IN): TOTAL DEPTH DRILLED (FT):	4 ft Macro-	core/ 1.75 inch BORING ME  8 DEPTH TO V	-	Hand Held	DRILLER:	W. Rodriguez  Nestor Rivera		

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
1	42	16 9	(0.5-1)		(0- 22") Gravelly silty SAND, gray white, slightly moist, soft, loose, angular to sub angular rock fragments
		86 364			
		187 18			
3		10 1			
4	48	87 1			(48-72") Sand, silty CLAY, gray black brown, local gravel, angular rock fragments
5		3 456	(5.5-6)		
6		120 81			(72-96") Sandy silty CLAY, brown black light green veins, slightly moist, stiff
7		52 34			
8 <u></u>					Refusal at 8'
9					
10					
11					
12					
<b>├</b>					

AMA 110 Corporate Pa White Plains, New Y	rk Drive		SOIL BORING	G LOG		BORING NUMBER D-21
PROJECT NO:			LOCATION:	Humacao, PR GeoEnvirotech	DATE:	07/10/07
SAMPLER TYPE/DIAMETER (IN): TOTAL DEPTH DRILLED (FT):	4 ft Macro	n-core/ 1.75 inch	BORING METHOD:	Direct Push : na	DRILLER: _	William Rodriguez M. Stein

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
	45	0			(0-6") Asphalt, fill (6-12") Sandy silty CLAY, gray-brown, dry
		10 507	(1-1.5)		(12-24") Sandy silty CLAY, greenish gray, slightly moist, soft, trace gravel
3		507 1156			(24-25") Wood fragment (25-40") Silty CLAY, light brown
		797			(40-45") Sandy, SILT, light brown
4	48	453 1169			(48-72") Silty CLAY, light moist, slightly moist, soft
6		1185 1115	(5-5.5)		
7		505 412			(72-78") Clayey SILT, light brown, slightly moist, soft (78-96") Clayey SILT, brown, slightly moist, stiff
8		295 148			
9	45	432 61			(96-104") Clayey SILT to silty CLAY, brown to dark brown, moist, soft to stiff (104-112") SAND medium to coarse, dark brown, wet, trace clay
		61 13			(112-120") Silty SAND fine, pink-gray, wet, soft
10		18 14			(120-144") Silty SAND fine, pink-grey, wet, soft
11		0			End of Boring at 12ft bgs
12					

AMA 110 Corporate Pa White Plains, New Y		SOIL BORIN	IG LOG	B	ORING NUMBER D-22	
PROJECT NAME: PROJECT NO:			LOCATION:  CONTRACTOR:	Humacao, PR  GeoEnvirotech	DATE:	07/10/07
SAMPLER TYPE/DIAMETER (IN): TOTAL DEPTH DRILLED (FT):	4 ft Macro	n-core/ 1.75 inch	BORING METHOD:	Direct Push	DRILLER:	William Rodriguez M. Stein

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
		7			(0-8") Asphalt, fill
	42	188			
1					(8-22") Sandy silty CLAY/Gravel, gray-brown, slightly moist
		51 46			
2		40			(22-26") Sandy SILT, dark brown, slightly moist, hard
		176			(26-42") Sandy silty CLAY, light brown, slightly moist
		108			
3		82	(3-3.5)		
			,		
4					
	48	209 208			(48-72") Sandy SILT, light brown, slightly moist, stiff, some gravel, odor
5		200			
		1010			
		1318	(5.5-6)		
6		1228			(72-96") Clayey SILT, brown, slightly moist, stiff
		80			
7					
		93 100			
8		100			
	48	107			(96-102") Same as above
		465			(102-132") Sandy silty CLAY, brown to dark brown, moist, stiff, trace sand
9		210			
		85			
10					
		35 12			
11		12			
		0			(132-144") SAND medium to coarse, pink-gray, wet
		17			End of Boring at 12ft
12					

AMAI 110 Corporate Park Drive White Plains, New York 10604	SOIL BORING LOG		BORING NUMBER D-23		
PROJECT NAME: Bristol Myers PROJECT NO: Interim Corrective	<u> </u>	rotech DATE:	07/10/07		
SAMPLER TYPE/DIAMETER (IN): 4 ft Ma	cro-core/ 1.75 inch         BORING METHOD:         D           16         DEPTH TO WATER (FT):         na	irect Push  LOGGED BY:	William Rodriguez M. Stein		

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
		33.4			(0-12") Silty clayey SAND/SILT/GRAVEL, green-brown
<u> </u>	44	25			, , , , , , , , , , , , , , , , , , , ,
1					
		39			(12-18") Asphalt
2		37			(18-24") Same as (0-12")
		19			(24-36") Silty SAND, greenish gray, slightly moist, soft
		17			
3		44			(26 44") Clayay SILT brown clightly majet atiff
		11 8	(3.5-4)		(36-44") Clayey SILT, brown, slightly moist, stiff
4					
	27	24			(48-56") Sily SAND, greenish grey, little gravel
5		22			(56-68") Silty CLAY, gray-brown, moist, soft
3		23			
<u> </u>		25			(68-71") Rock fragment
6					(71-75") GRAVEL, saturated, fragments
		10			
7					
8		18			(96-120") Silty CLAY, brownish gray, moist, stiff
	46	16			
9					
		25 19	(9-9.5)		
10		13			
		12			(120-142") Sandy silty CLAY, gray, wet, soft to stiff
		12			
11		21			
<u> </u>		10			
12					
	48	14			(144-170") Silty CLAY, brown, saturated, soft
13		10			

110 Corporate Park Drive White Plains, New York 10604

#### **SOIL BORING LOG** Page 2 of 2

BORING NUMBER

D-23

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	USCS CODE	LITHOLOGIC DESCRIPTION AND COMMENTS
		25			
<u> </u>		12			
14					
		15			(170-174") Same as above with sand
		17			(174-182") Silty CLAY, gray, wet, soft
15					(Tri 102) only out the first soil
15		24			(182-192") SAND medium to coarse, pinkish gray, wet, soft
		21			(162-192) SAND Medium to coarse, pilikish gray, wet, soit
		17			
16					End of Boring at 16ft.
<u> </u>					
<u> </u>					
<u> </u>					
<u> </u>					
<u> </u>					
<u> </u>					

110 Co	AMAI proprate Park Drive pains, New York 10604	SOIL BORI	NG LOG	BORING NUMBER D-24		
PROJECT NAME: PROJECT NO:	Bristol Myers Squ Interim Corrective M		Humacao, PR GeoEnvirotech	DATE:	07/10/07	
SAMPLER TYPE/DIAME		p-core/ 1.75 inch BORING METHOD:  16 DEPTH TO WATER (	Direct Push FT): na	DRILLER: _	William / Abraham M. Stein	

DEPTH	1	<u> </u>		Γ	
FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
					(0-8") Asphalt, backfill
	30	0			(8-30") Sandy silty GRAVEL, light brown light gray, dry
1					(e se ) sailey any state 22, light slown light gray, ary
		0			
2					
					(30-48") No recovery
3					
4					
	48	0	(4.5-5)		(48-66") Silty CLAY, brownish gray, moist, stiff, (62-64")sub-rounded fragments
5			( 5)		
3		30			
		32			(66-96") Same as above, no gravel, clayey, moist to wet
6		34			
		27			
<sup>7</sup>		38	(7-8)		
		30	(7.5-8)		
8					
	48	15 33			(96-106") Silty SAND, brownish gray, saturated
9					(106-114") Silty CLAY, brownish gray, saturated, soft.
		25			(444 400 N Clause Oll T. 1999 1994 1999 1977 1979
10		32			(114-132") Clayey SILT, gray, saturated to wet, stiff to soft.
		26			
11		20			
··		21			(132-144") Sandy SILT, gray, pink, wet, soft
		29			
12		296			(144-158") Silty CLAY, brown, saturated, stiff
	48	32			
13					

110 Corporate Park Drive White Plains, New York 10604

#### **SOIL BORING LOG** Page 2 of 2

BORING NUMBER

D-24

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	USCS CODE	LITHOLOGIC DESCRIPTION AND COMMENTS
		27			(158-162") SAND/GRAVEL coarse, brown, saturated, soft
		30			(162-192") SAND medium to coarse grained, pink-gray, wet, (188-192") little clay
14		41			
		32			
15		<u> </u>			
		33			
		27			
16					End of Boring at 16 ft bgs

AMA 110 Corporate P. White Plains, New		SOIL BORIN	NG LOG		BORING NUMBER D-25	
PROJECT NO:		Bristol Myers Squibb nterim Corrective Measure		Humacao, PR  GeoEnvirotech	DATE:	07/10/07
SAMPLER TYPE/DIAMETER (IN):	- 4 ft Macro	o-core/ 1.75 inch	BORING METHOD:	Direct Push	DRILLER:	William R
TOTAL DEPTH DRILLED (FT):	4 It Macro	12	BORING METHOD:		LOGGED BY:	M. Stein

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
1	42	0			(0-8") Asphalt (8-42") Backfill, sandy silty GRAVEL/ SAND, slightly moist, loose, angular fragments
		0			
3		0			
		0			
5	46	0			(48-65") Slough of material from top
		0			(65-106") Sandy CLAY, brownish yellow, slightly moist, stifl
6		0			
8		0			
9	46	0			(96-115") Slough of material from top
10		0			(115-142") Silty SAND sandy SILT, light brown gray with black veins, moist to we
		0	(10-10.5)		
		0			
11					

110 Corpor	<b>VIAI</b> ate Park Drive New York 10604	S	OIL BORIN	IG LOG	вс	D-26
PROJECT NAME: PROJECT NO:	Bristol Myers Squ Interim Corrective M		LOCATION: Humacao, PR  CONTRACTOR: GeoEnvirotech		DATE:	07/11/07
SAMPLER TYPE/DIAMETER TOTAL DEPTH DRILLED (F			ORING METHOD:	Direct Push	DRILLER:	Abraham Nuniz  Nestor Rivera

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
1	24	0			(0-24") Backfill, gravelly sandy silty CLAY, gray yellow-brown green, angular gravel
		0			
3		0			(24-60") No recovery
4					
5					
6	54	0			(60-77") Sandy silty CLAY, green, light brown gray, moist, soft to stiff
7		0.5	(6.5-7)		(77-83") Gravelly sandy silty CLAY, yellow-brown brown green, soft, rock fragments  (83-114") Sandy silty CLAY, gray green light and dark brown, slightly moist, very stiff
		2 2.9			
9		2.3 45.4			
10		310 2192	(9.5-10)		
	24	555 153			(120-148") Sandy silty CLAY very fine sand, gray redish brown with black veins, slightly moist, very stiff
11		48 44			
12					

AM 110 Corporate White Plains, Ne	Park Drive	SOIL	BORING	LOG	ВС	PRING NUMBER D-27
PROJECT NAME: Bristol Myers Sq. PROJECT NO: Interim Corrective N				Imacao, PR  GeoEnvirotech	DATE:	07/13/07
SAMPLER TYPE/DIAMETER (II TOTAL DEPTH DRILLED (FT):	,	core/ 1.75 inch BORING	METHOD: D WATER (FT):	Direct Push	DRILLER:	Abraham Nuniz / William Rodriguez  Nestor Rivera

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
1	30	0			(0-12") Backfill, gravelly sandy silty CLAY
_ · _		9			(12-30") Sandy silty CLAY, some gravel fragments, green yellow-brown brown, slightly moist, stiff
3		308			(30-48") No recovery
4					
5	39	65 60			(48-65) Slough of material from above
6		1377 1365	(5-5.5)		(65-87") Sandy silty CLAY, brown yellow-brown gray, slightly moist, stif
7		960 338			
8		44			(87-96") No recovery
9	46	855 124			(96-136") Sandy silty CLAY, yellow-brown gray brown, slightly moist, stif
10		268 401			
11		432 242			
12		87			(136-142") SAND medium to coarse grained, gray, moist to wet, loose
13	46	1816			(144-161") Slough of material from top

110 Corporate Park Drive White Plains, New York 10604

#### **SOIL BORING LOG** Page 2 of 2

BORING NUMBER D-27

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	USCS CODE	LITHOLOGIC DESCRIPTION AND COMMENTS
		ı	T	1	
		760			(161-180") SAND medium to coarse, red gray, saturated, loose
<u> </u>		301			
14					
		127			
		3			
15					
		1			
		1			
		'			
16					End of Boring at 16 ft bgs
<u> </u>					
<del>                                     </del>					
<u> </u>					
<del> </del>					
<u> </u>					
	l .	I	l	<u> </u>	

Bristol Myers Squibb	LOCATION:  CONTRACTOR		nacao, PR GeoEnvirotech	DATE:	07/13/07
			Direct Push	DRILLER:	William Rodriguez  Nestor Rivera
nteri	4 ft Macro-core	4 ft Macro-core/ 1.75 inch BORING METHOL	4 ft Macro-core/ 1.75 inch BORING METHOD:	4 ft Macro-core/ 1.75 inch BORING METHOD: Direct Push	DATE:  4 ft Macro-core/ 1.75 inch BORING METHOD: Direct Push  DRILLER:

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
1	24	1			(0-24") Backfill, gravelly sandy silty CLAY, green gray yellow-brown, slightly moist, stif
2		0			
3					
4			(3.5-4)		
5	42	0			(48-64") Slough of material from top
6		209 2572			(64-90") Sandy silty CLAY, yellow-brown black with white veins, slightly moist, stif
7		2850 1182			
8		2251	(7-7.5)		
9	46	922 2336			(96-120") Sandy silty CLAY, some gravel fragments, yellow-brown green, slightly moist, stif
10		792 225			
10		141 93			(120-142") SAND/silty SAND, medium to coarse, brown greenish gray
		21 42			
12	42	638 472			(144-162") Slough of material from top

110 Corporate Park Drive White Plains, New York 10604

#### **SOIL BORING LOG** Page 2 of 2

BORING NUMBER D-28

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	USCS CODE	LITHOLOGIC DESCRIPTION AND COMMENTS
		768			
<u> </u>		307			(162-170") Sandy silty CLAY, gray brown, slightly moist, stiff
		007			
14					
		64			(170-186") SAND medium to coarse, gray green brown, slightly moist, loose
		16			
15					
		7			
16					End of Boring at 16ft bgs
<u> </u>					
<u> </u>					
$\vdash$					
<u> </u>					
$\vdash \vdash$					
<u> </u>					
$\vdash \vdash$					

AMAI 110 Corporate Par White Plains, New Yo		SOIL BORIN	NG LOG	BORING NUMBER D-29		
PROJECT NO: Bristol Myers Squ PROJECT NO: Interim Corrective M			LOCATION: CONTRACTOR:	Humacao, PR GeoEnvirotech	DATE:	07/12/07
SAMPLER TYPE/DIAMETER (IN): TOTAL DEPTH DRILLED (FT):	5 ft Macro	13 13	BORING METHOD:DEPTH TO WATER (F	Direct Push FT): na	DRILLER:	Abraham Nuniz  Nestor Rivera

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
1	53	0			(0-3") Asphalt (3-53") Backfill, gravelly sandy silty CLAY, brown gray, slightly moist, stiff, local gravel
2		2 51			
3		869 982			
4		209 1078			
5					
6	58	1017 327			(60-72") Slough of material from top
7		708 103	(6.5-7)		(72-118") Sandy silty CLAY, gray light brown, slightly moist, soft to stiff, iron concretions,
8		349 321			
9		330 207			
10		83 124			
11	42	650 481			(120-138") Slough of material from top
12		112 6			(138-144") SAND/ silty SAND medium to coarse, brown gray, wet, loose
13		10 8			(149-162") Sandy silty CLAY, brown gray with iron concretion, moist to wet End of Boring at 13ft. Bgs

AMAI 110 Corporate Park Drive White Plains, New York 10604	SOIL BORIN	G LOG	во	D-30
PROJECT NAME: Bristol Myer PROJECT NO: Interim Correct		Humacao, PR GeoEnvirotech	DATE:	07/11/07
5.4.4	Maria cara/4.75 inch. DODING METHOD	Direct Duch	DRILLER:	Abraham Nuniz
SAMPLER TYPE/DIAMETER (IN): 5 ft N  TOTAL DEPTH DRILLED (FT):	Macro-core/ 1.75 inch BORING METHOD:  12 DEPTH TO WATER (FT	Direct Push  na	LOGGED BY:	Nestor Rivera

··	T		1	•	
DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
1	16	0			(0-10") Backfill, gravelly sandy SILT/ silty SAND, light brown, slightly moist, loose, angular fragments.  (10-16") Sandy silty CLAY, gray light brown gray, slightly moist, stiff, gravel fragments
		0			(16-60") No recovery
3					
4					
5	30	0			(60-73") Slough of material from top
6		0			(73-81") Sandy silty CLAY, light brown gray red, slilghtly moist, stiff (81-90") Silty SAND/ SAND fine to medium grained, wet, stiff, loose
7		0			
8 <u> </u>		0			
9		0			
10	36	0	(10.5-11)		(120-130") Slough of material from top
11		0			(130-156") Silty SAND sandy SILT fine to medium coarse ,gray black with brown veins, moist to wet
12					End of Boring at 12ft. Bgs
13					

AMA 110 Corporate Par White Plains, New Yo	SOIL	BORIN	NG LOG		BORING NUMBER D-31	
PROJECT NAME: PROJECT NO:	Bristol Myers Squi			Humacao, PR GeoEnvirotech	DATE:	07/11/07
SAMPLER TYPE/DIAMETER (IN): TOTAL DEPTH DRILLED (FT):	-	-core/ 1.75 inch BORING M	ETHOD:	Direct Push	DRILLER:	W. Rodriguez M. Stein

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
1	36	700 1400			(0-8") Sandy silty CLAY, dry, concrete dust, gravel.  (8-11") Sandy silty CLAY, gray, slightly moist, some gravel  (11-36") Silty CLAY, brown-green, slightly moist, stiff
		360 85	(1.5-2)		
3		76 25			
4		42			(36-48") No recovery
5	48	93 0			(48-54") Same as above (54-68") Silty CLAY trace sand, light brown, slightly moist, soft
6		23 18			(68-96") Silty CLAY, brown gray, slightly moist, soft
7		12.5 17			
8		240 286			
9	42	3.6 173			(96-123") Same as above, light brown (111-123"), wet, stiff
10		199 346			
11		664 24.2	(10.5-11)		(123-128") Sandy silty CLAY, gray, wet, soft (128-138") SAND medium coarse, pink-gray, wet, soft
12		10.3			
13					End of Boring at 12ft. Bgs

AMA 110 Corporate Pa White Plains, New Y	rk Drive		SOIL BORING	G LOG		BORING NUMBER D-32
PROJECT NAME: PROJECT NO:	Bristol Myers Squ Interim Corrective M		LOCATION:	Humacao, PR GeoEnvirotech	DATE:	07/11/07
SAMPLER TYPE/DIAMETER (IN): TOTAL DEPTH DRILLED (FT):	4 ft Macro	n-core/ 1.75 inch	BORING METHOD:	Direct Push	DRILLER:	W. Rodriguez M. Stein

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
(FEEI)		<u> </u>			
	42	0			(0-6") GRAVE, sandy, silty, CLAY, gray, saturated to wet
		2194			(6-42") Sandy CLAY, gray-brown to light brown, slightly moist, soft to stiff
1					
		65			
2		0			
2					
		0			
3					
		0			
4	48	0.2			(49 SC") CLAV light brown wat coft
	48	0.3 36			(48-66") CLAY, light brown, wet, soft
5					
		8.2 0			(66-72") Clayey sandy SILT, light brown, wet, soft
6		0			
		0			(72-90") CLAY, gray, wet, soft
7		0	(6.5-7)		
7		59.0			
		97.0			
8					
	48	0			(96-118") CLAY, gray light brown, saturated, soft
		0			
9					
		0			
10		23			(118-124") Silty fine SAND/ sandy SILT, pink-gray, wet, soft
10		79			(124-138") Silty fine SAND, trace clay, light brown, soft
<del></del>		446			
11					
		9999	(11-11.5)		
		7157			(138-144") SAND medium to coarse, pink-gray
12	40	440			(AAA AARII) Corpo oo obayya
	48	113 81			(144-148") Same as above (148-168") Silty CLAY, gray light brown, saturated, soft, little fine gravel
13		01			(140-100 ) Silly CLAT, gray light brown, Saturated, Soft, little lifte graver

110 Corporate Park Drive White Plains, New York 10604

# SOIL BORING LOG

Page 2 of 2

BORING NUMBER

D-32

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	USCS CODE	LITHOLOGIC DESCRIPTION AND COMMENTS
		428 495			
14					
		293			(168-172") GRAVEL/ SAND, pink-gray, saturated
45		11			(172-184") SAND medium coarse, pink-gray, wet, trace clay
15		41			(184-188") CLAY, gray, saturated, soft
		70			(188-192") SAND medium coarse, gray, wet, soft
16					
<u> </u>					

AMAI 110 Corporate Park Dr White Plains, New York 1			SOIL BORI	NG LOG		BORING NUMBER D-33
PROJECT NO: Bristol Myers Sq PROJECT NO: Interim Corrective N			LOCATION: CONTRACTOR:	Humacao, PR GeoEnvirotech	DATE:	07/10/07
SAMPLER TYPE/DIAMETER (IN): TOTAL DEPTH DRILLED (FT):		core/ 1.75 inch	_BORING METHOD: _DEPTH TO WATER (F	Direct Push FT): na	DRILLER:	William Rodriguez  Nestor Rivera

DEPTH		<u> </u>		1	
FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
1	18	0			(0-18") GRAVEL with very fine sand backfill, wet to moist, loose
2		0			(18-48") No recovery
3					
4					
5	48	0			(48-96") Slough of material from top, sandy silty CLAY, dark gray light brown, slightly moist, stiff
6		0	(5.5-6)		
7		1 52			
8		0			
9	48	0 42	(8.5-9)		(96-106") Sandy silty CLAY, same as above  (106-144") Silty SAND/ SAND medium to coarse, moist to wet, loose
10		0			
11		0			
12		0			End of Boring at 12ft. Bgs
13					

	AMAI orporate Park Drive lains, New York 10604	SOI	IL BORIN	IG LOG		BORING NUMBER D-34
PROJECT NAME: _ PROJECT NO: _	Bristol Myers S	•	· · · · · · · · · · · · · · · · · · ·			07/10/07
SAMPLER TYPE/DIAM			IG METHOD: I TO WATER (F	Direct Push T): na	DRILLER: LOGGED BY:	William Rodriguez  Micheal Stein / Nestor Rivera

DEPTH	DECOVERY	DID	CAMPI F	Bi Oir	LITTROLOGIC PESCRIPTION AND COMMENTS
FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW	LITHOLOGIC DESCRIPTION AND COMMENTS
	46	0			(0-8") Asphalt, fill
1		0			(8-46") Gravelly sandy CLAY, yellow gray, slightly moist, soft, angular rock fragments
		0			
2		0			
2		_			
		0			
3					
		0			
4		5			
	42	0	(4-4.5)		(46-73") Gravelly sandy CLAY to clayey, sandy GRAVEL, yellow-brown to brown, slightly moist, soft, angular fragments
5		36			
		1030			
6		182			
。		1262			(73-90") Sandy CLAY, brown with black veins, slightly moist, stiff, roots, fine sand
		1369	(6.5-7)		
7 <u></u>		83			
		26			
8					
	45	1104 292			(96-115") Sandy silty CLAY, brown gray with balck/red veins, slightly moist, stiff,
9		292			
		12			
10		11			(115-141") Silty SAND/ sandy SILT, gray red green, moist, soft
10		26			
<u> </u>		1			
11					
		0			First of Parish and 40% Parish
12					End of Broing at 12ft. Bgs
13					

	AMAI  orporate Park Drive  ains, New York 10604	SOIL BORII	NG LOG		BORING NUMBER D-35
PROJECT NO: Bristol Myers Sq PROJECT NO: Interim Corrective N			Humacao, PR  GeoEnvirotech	DATE:	07/10/07
SAMPLER TYPE/DIAMI		p-core/ 1.75 inch BORING METHOD:	Direct Push FT): na	DRILLER: _	W. Rodriguez M. Stein

		η	1		
DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
		0			(0-2") GRAVEL
	46	4			(2-22") Sandy silty CLAY, light brown to gray
1					
		3	(1-1.5)		
		31			(22-40") Sandy clayey SILT, brown, dry, stiff, some gravel
2		87			
		9			
3					
		21			(40-46") Silty CLAY, gray-brown, slightly moist, stiff
		44			
4		62			(48-66") Silty SAND/ sandy SILT, light brown, trace clay
	48	24			(40-00) Sitty SAND/ Sandy SILT, light blown, trace day
5					
		1			
		8			(66-78") SILT, brown, slightly moist, stiff
6		0	(0, 0, 5)		
		0	(6-6.5)		(78-96") Silty fine SAND, brown to pinkish gray, slightly moist, stiff
7					( · · · · / · · · / · · · · · · · · · ·
		0			
		Ĭ			
8		42			(96-108" ) Sandy SILT, brown to gray, slightly moist, soft
	44	42			(90-100 ) Salidy SIET, Brown to gray, slightly moist, soft
9					
		0			(108-114") Clayey SILT, gray, moist, soft
		0			(114-140") Silty SAND, gray to pinkish gray, wet, soft
10					
		0			
11		0			
		0			
		0			End of Boring at 12ft. Bgs
12					
13					
		<u> </u>	<u>i</u>		I

AMA 110 Corporate Pa White Plains, New Y	rk Drive	SOIL	. BORIN	G LOG		D-36
PROJECT NAME:PROJECT NO:	Bristol Myers Squ Interim Corrective Me		TION: <u> -</u> RACTOR:	Humacao, PR GeoEnvirotech	DATE:	07/09/07
SAMPLER TYPE/DIAMETER (IN):	4 ft Macro	-core/ 1.75 inch BORING	METHOD:	Direct Push	DRILLER:	W. Rodriguez / A. Nunez  Nestor Rivera

DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
	24	0			(0-13") Rock fragments, top soil
1		0			(13-24") Silty sandy CLAY, dark gray brown, slightly moist, soft to stiff
2					(24") Large rock fragment at 24"
3					
4	46	0			(48-78") Sandy silty CLAY, slightly moist, stiff
5		0			
6		0	(0.0.5)		
7		0 11	(6-6.5)		(78-94") Sandy CLAY/ (92-96") clayey SAND , brown gray red, soft to stiff
		5 68			
8 8	46	4			(96-142") Silty sand to SAND medium to coarse, light brown, gray red, slightly moist to moist
9		70			
10		392 348	(10-10.5)		
11		0	(10 10.0)		
		0			
12					End of Boring at 12 ft bgs
13					

AMA 110 Corporate Pa White Plains, New Y		SOIL BORII	NG LOG	Е	ORING NUMBER D-37	
PROJECT NAME: PROJECT NO:	Bristol Myers Squ Interim Corrective M		LOCATION:	Humacao, PR  GeoEnvirotech		
			_		DATE:	07/11/07
SAMPLER TYPE/DIAMETER (IN):	4 ft Macro	o-core/ 1.75 inch	BORING METHOD:	Direct Push	DRILLER: _	W. Rodriguez
TOTAL DEPTH DRILLED (FT):		12	DEPTH TO WATER (	FT): na	LOGGED BY:	M. Stein

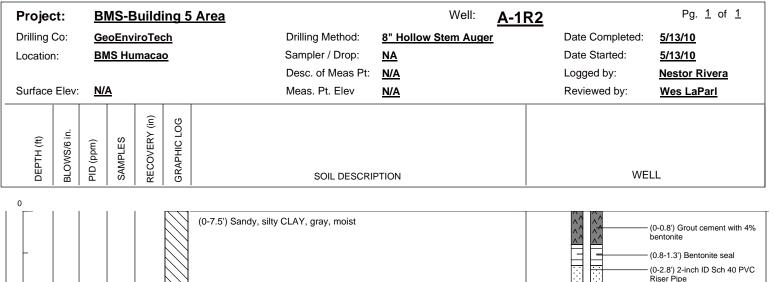
DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
					(0-8") Asphalt
<u> </u>	8	0			(8-48") No recovery
<u> </u>					
2					
3					
4					(48-63") Silty CLAY, brown, moist, soft, little gravel
	41	0			(10 dd ) diny ddi (1, didwi), molol, ddin, mae gravel
5		0			(63-67") Sandy silty CLAY/ GRAVEL, brown, sub rounded
6		U			(67-78") Silty CLAY, light brown, wet, soft.
		0			
7					(78-89") Clayey SILT, dark brown to light brown, moist, stiff
		0			(89-96") No recovery
8					(96-114") Sandy silty CLAY, light brown, moist, soft
	46	0			(90-114) Sandy Sinty GEAT, light brown, moist, soft
9			(0.5.40)		
10		0	(9.5-10)		(114-124") Clayey SILT, greenish brown, moist, stiff
		0			(124-138") Fine sandy SILT, pink-gray, wet, stiff
11					
		0			(138-142") SAND medium, gray, stiff
12					End of Boring at 12ft. Bgs
13					

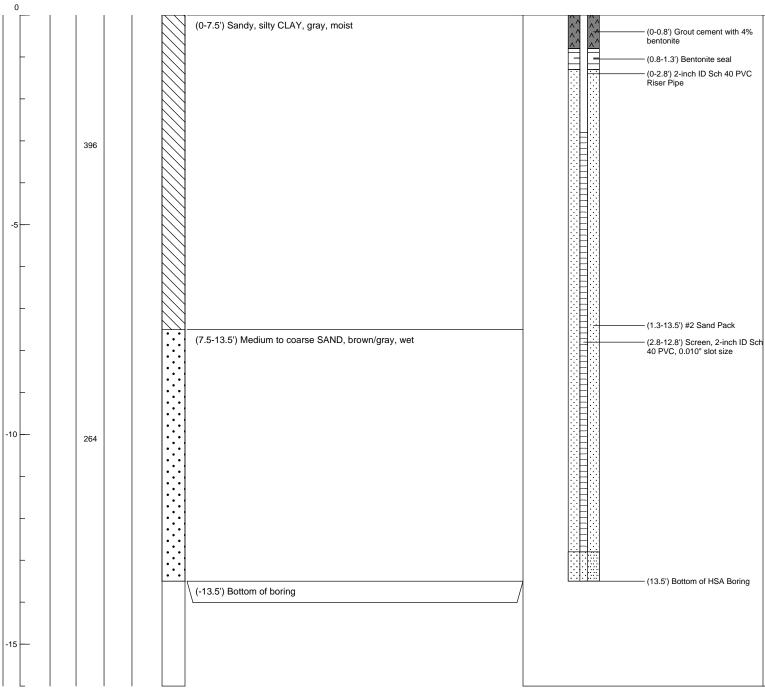
AMAI 110 Corporate Park Drive White Plains, New York 10604	SOIL BORING LOG	I	BORING NUMBER D-38
PROJECT NAME: Bristol Myers Some PROJECT NO: Interim Corrective Interi		DATE: _	07/09/07
SAMPLER TYPE/DIAMETER (IN): 4 ft Mac  TOTAL DEPTH DRILLED (FT):	o-core/ 1.75 inch         BORING METHOD:         Direct Push           12         DEPTH TO WATER (FT):         na	DRILLER: _ LOGGED BY: _	W. Rodriguez/ A. Nunez  Nestor Rivera

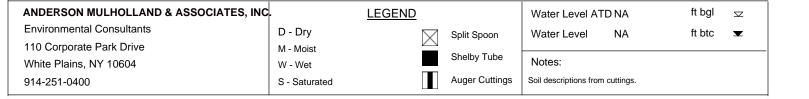
DE	PTH	1				
FF SUR	ROM RFACE	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
(FI	EET)	, , , ,	41 /			
			1			
		24	0			(0-1") Asphalt
		7				(1-24") Gravelly sandy SILT/ silty SAND, light green gray, slightly moist, loose, angula fragments
	1		0			nagments
		4	0			
	2		0			
						(04 40ll) No. 2000 (15 10 10 10 10 10 10 10 10 10 10 10 10 10
						(24-48") No recovery
	3					
		1				
	4					
						(48-60") GRAVEL, saturated, loose, angular
	_	20	0			
	5					
	·					(00 00II) O
			0			(60-68") Sandy silty CLAY, light brown light green, slightly moist, sof
						(68-96") No recovery
	6					(,
	_	+				
	7					
		_				
	0					
	8					(00.400)) 0
		42	0			(96-100") Gravel, same as above
						(100-138") Gravelly sandy, silty CLAY, slightly moist to saturated, stif
	9					
		+	0	(9-9.5)		
	10					
	-					
	_	4	0			
<u> </u>	11	+				
			0			
		7				
·	12					End of Boring at 12 ft bgs
		+				
	13					

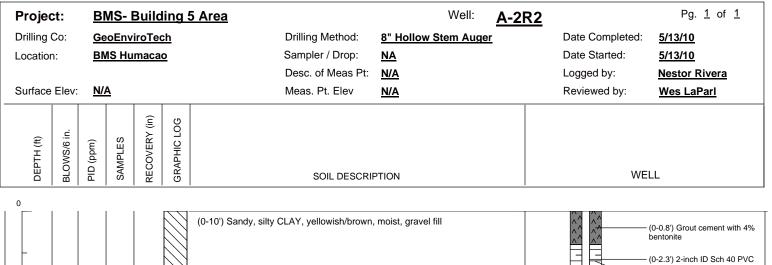
110 Cor	AMAI porate Park Drive ns, New York 10604	SOIL BOR	RING LOG		BORING NUMBER D-39		
PROJECT NO: Bristol Myers Sq. PROJECT NO: Interim Corrective M			Humacao, PR  GeoEnvirotech	DATE:	07/09/07		
SAMPLER TYPE/DIAMET		p-core/ 1.75 inch BORING METHOD 12 DEPTH TO WATER		DRILLER: LOGGED BY:	W. Rodriguez / A. Nunez  Nestor Rivera		

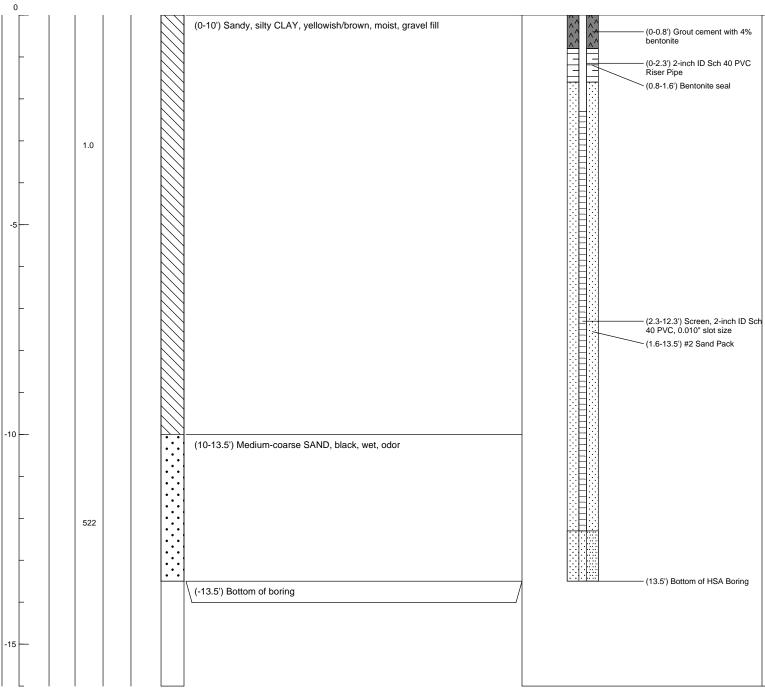
DE==	i	<u> </u>	li .		
DEPTH FROM SURFACE (FEET)	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	BLOW COUNT	LITHOLOGIC DESCRIPTION AND COMMENTS
1	46	0			(0-12") Gravelly sandy SILT/ sandy GRAVEL
		0			(12-46") Sandy silty CLAY, brown, slightly moist, soft to stiff, angular fragments
		0			
		0			
5	46	0			(48-94") Sandy silty CLAY, brown gray with black veins, slightly moist, stiff, fine sand
6		0			
7		0			
8		0			
9	42	0			(96-100") Slough of material from top  (106-138") SAND silty sand sandy SILT, gray red light brown, (120-138") wet to saturated
10		0	(9.5-10)		
11		0			
12		0			End of Boring at 12 ft bgs
13					

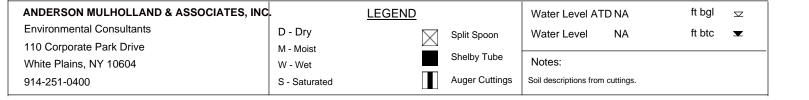


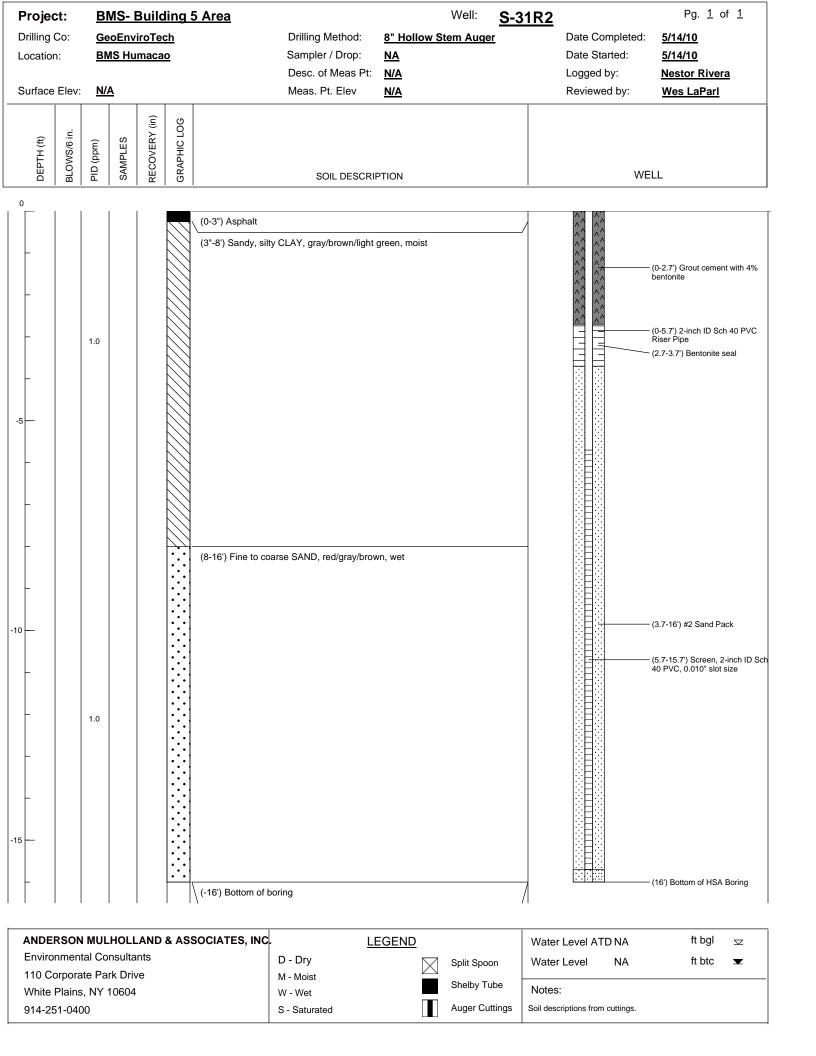












# Appendix B

Laboratory Analytical Results (On CD-ROM)